



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,912	01/18/2000	Shigeo Moriyama	29273/516	5646

26646 7590 10/28/2003

KENYON & KENYON  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER

NGUYEN, DUNG V

ART UNIT	PAPER NUMBER
----------	--------------

3723

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/462,912

Applicant(s)

MORIYAMA ET AL.

Examiner

Dung V Nguyen

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 3723

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because it's not limited to a single paragraph within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 1 and 10 recite the limitation "said workpiece" in line 3, claim 11 recites the limitations "the thin film surface" in line 2, "the surface" in line 2. There is insufficient antecedent basis for these limitations in the claims. For example, in claim 1, "said workpiece" should be "said semiconductor wafer".

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Art Unit: 3723

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-3, 5, 6, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Sandhu et al (USPN 5,975,994). Sandhu et al discloses a polishing apparatus 100 which imparts relative motion between a layer with concave portion and a convex portion on a semiconductor wafer 110 and a polishing tool 140 having a plane polishing surface to polish the surface of a workpiece 110 by the plane polishing surface of the polishing tool 140, comprising a dressing tool 170 having a plane dressing surface for forming a surface roughness on the plane polishing surface of the polishing tool 140, a first moving means 136d for imparting relative motion in a direction horizontal to the plane polishing surface of the polishing tool 140 between the dressing tool 170 and the polishing tool 140, a second moving means 166a for moving the dressing tool 170 in a direction vertical  $V_2$  to the plane polishing surface of the polishing tool, a control means 180 for permitting to execute movement caused by the first moving means 136a while controlling a position of the second moving means 166a, wherein the polishing tool 140 is formed of abrasive grain and a material for joining and holding the abrasive grain, wherein the dressing tool 170 includes a plurality of kinds of hard grains, wherein the first moving means 136a moves the dressing tool 170 so that the dressing tool 170 moves on the polishing tool 140. Sandhu et al also discloses a method for manufacturing a semiconductor substrate 110 formed with an irregularity pattern to the polishing surface of a polishing tool 140 for relative motion comprising

Art Unit: 3723

forming a surface roughness with a dressing tool 170 on the polishing surface of the polishing tool 140, during the polishing process, while controlling movement of the dressing tool 170 in a vertical direction with respect to the polishing surface (note Fig. 1, 2 and 3, col. 1, lines 38-60, col. 4, line 35 to col. 7, line 53).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandhu et al in view of Southwick (USPN 5,782,675). Sandhu et al disclosed the claimed invention as described above, however, Sandhu et al does not disclose the hard grain is diamond. Southwick discloses the hard grain is diamond (note col. 1, line 66 to col. 2, line 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to diamond in order to form a new and clean planarizing surface on the polishing tool.

***Allowable Subject Matter***

10. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the art of record considered as a whole alone or in combination neither anticipates nor renders obvious, setting means for setting a cut-in amount of the

Art Unit: 3723

dressings tool with respect to the polishing tool and the moving means moves in accordance with a value set by the setting means, in combination with the rest of the limitations of claim 7.

***Response to Arguments***

12. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lai et al and Doan et al are cited to show polishing apparatus.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung V Nguyen whose telephone number is 703-305-0036. The examiner can normally be reached on M-F, 6:30-3:00.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J Hail can be reached on 703-308-2687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

DVN  
October 21, 2003

  
**DUNG VAN NGUYEN**  
**PRIMARY EXAMINER**